

Response:

Claim 11 is currently written:

11. (Thrice Amended) An apparatus for analyzing chemical species comprising:
- (a) a time-of-flight mass analyzer with an ion pulsing region and a detector,
 - (b) an ion source for producing ions forming an ion beam from said chemical species,
 - (c) a two-dimensional multipole ion guide having an entrance end where ions enter said ion guide from said ion source and an exit end where ions exit said ion guide, said two-dimensional multipole ion guide functioning as a two-dimensional ion trap, wherein said two-dimensional multipole ion guide comprises a plurality of spaced apart rods parallel to each other and extending from said entrance end to said exit end, said ion beam having an axis thereof which is parallel to said spaced apart rods,
 - (d) means for pulsing said ions, transferred into said pulsing region, into said time-of-flight mass analyzer for mass analysis, and
 - (e) means for detecting said mass analyzed ions.

Element (c) of pending Amended Claim 11 includes the limitation: "...said two-dimensional multipole ion guide functioning as a two-dimensional ion trap,...". However, Whitehouse ('851) fails to teach, mention or suggest a two-dimensional multipole ion guide that functions as a two-dimensional ion trap.

The Examiner states that Whitehouse ('851) disclose "... an exit lens 120 for gating the ions in the ion guide 118 to prevent excessive charge buildup in the ion guide 118 (see col. 15, line 32 to col. 19, line 9)." However, nowhere in the referenced passage col. 15, line 32 to col. 19, line 9 does there appear any mention of exit lens 120 being used for "gating the ions in the ion guide 118", neither to "prevent excessive charge buildup in the ion guide 118", nor for any other reason.

In fact, the only reference to exit lens 120 in the entire description is found in col. 15, lines 34-38: "If the multipole ion guide AC and DC voltages are set to pass ions falling within a range of m/z then ions within that range which enter the multipole ion

LISTING OF CLAIMS:

Claims 1.-10. Cancelled

11. (Thrice Amended) An apparatus for analyzing chemical species comprising:
- (a) a time-of-flight mass analyzer with an ion pulsing region and a detector,
 - (b) an ion source for producing ions forming an ion beam from said chemical species,
 - (c) a two-dimensional multipole ion guide having an entrance end where ions enter said ion guide from said ion source and an exit end where ions exit said ion guide, said two-dimensional multipole ion guide functioning as a two-dimensional ion trap, wherein said two-dimensional multipole ion guide comprises a plurality of spaced apart rods parallel to each other and extending from said entrance end to said exit end, said ion beam having an axis thereof which is parallel to said spaced apart rods,
 - (d) means for pulsing said ions, transferred into said pulsing region, into said time-of-flight mass analyzer for mass analysis, and
 - (e) means for detecting said mass analyzed ions.
12. (Amended) An apparatus as set forth in Claim 11 comprising means to control the timing of said means for pulsing said ions transferred into said pulsing region.
13. (Never amended) An apparatus as set forth in claim 11, wherein said ions in said multipole ion guide are scanned at a scan rate sufficiently rapid to prevent excessive charge buildup in said multipole ion guide.

guide will exit at 121 and are focused with exit lens 120 through the TOF analyzer entrance orifice 122". In other words, Whitehouse ('851) only teaches that the function of exit lens 120 is to focus ions from the ion guide exit through the TOF analyzer entrance orifice 122. There is no teaching or suggestion that exit lens 120 may be used for gating ions in the ion guide, as the Examiner contends, and such contention is only hindsight based with no teaching or direction therefor in any prior art citation. The Examiner can not construct an interpretation of structure/function which is not shown, described nor taught, and is only found in the pending claims.

Further, Whitehouse ('851) does not teach, mention or suggest any other means for the Claim 11 limitation of "a two-dimensional ion guide functioning as a two-dimensional ion trap" anywhere in the '851 patent.

Hence, Claim 11 of the present application cannot be considered to be unpatentable over Whitehouse et al., in U.S. Patent No. 5,962,851.

Claims 12 and 13, which are dependent on Claim 11, should also be considered allowable at least for the reasons stated above.

Respectfully submitted,



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